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Docket No. S-94,729
In Response to Office Action dated September 14, 2005

REMARKS

Applicants appreciate the courtesy shown by the Office, as evidenced by the Office Action mailed on September 14, 2005. In that Office Action, the Examiner rejected Claims 1-43. As such, Claims 1-43 remain in the case with none of the claims being allowed.

The September 14 Office Action has been carefully considered. After such consideration, Claims 1, 11-12, 16-18, 22-25, 26, 31-34, 36, and 40-43 have been amended. Applicants respectfully request reconsideration of the application in light of the accompanying amendment and remarks presented herein.

Rejections under 35 U.S.C. §112

Claims 11-12, 16-17, 22-23, 31-32, and 40-41 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner states that the recited polymer molecular weight defined by a number only is indefinite, and should be defined by one of the standard types (Mw, Mn, etc).

Claims 11-12, 16-17, 22-23, 31-32, and 40-41 have each been amended accordingly so that the molecular weights recited bear the suffix "MW." Applicants submit that "MW" is the recognized abbreviation for molecular weight. See ACS Style Guide 60 (Janet S. Dodd ed., American Chemical Society 1986).

Applicants submit that, by so amending Claims 11-12, 16-17, 22-23, 31-32, and 40-41, the rejection of the claims under 35 U.S.C. §112, second paragraph, is successfully overcome.

Rejections under 35 U.S.C. §102

Claims 1-2, 9-26, 31-36, and 38-43 have been rejected under 35 U.S.C. §102(b) as being anticipated by Smith et al. (U.S. Patents 5,643,456 (referred to hereinafter as "Smith '456"); 5,891,956 (referred to hereinafter as "Smith '956"); and 5,766,478 (referred to hereinafter as "Smith '478").

Applicants submit that independent Claims 1, 26, and 36 have each been amended to recite the limitation that the functionalized polymer is bindable to a non-metallic solute or suite of non-metallic solutes. Claims 18, 24, 25, 33, 34, 42, and 43 have also been amended to identify the non-metallic species that are bindable to the functionalized polymer. Support for the amendments is found, for example, on page 9,

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lines 5-6; page 10, lines 12-16; page 17, lines 5-7; and Examples 5-10, found on pages 41-48 of the specification.

Applicants submit that, in order to anticipate under §102, a reference must teach every aspect of the claimed invention. Accordingly, Applicants submit that none of the three references cited by the Examiner anticipate amended Claims 1, 18, 24, 25, 26, 33, 34, 36, 42, and 43.

Smith '456 does not teach a functionalized polymer that is bindable to a non-metallic solute or suite of solutes. Instead, the reference teaches water-soluble polymers that retain metal ions. See, for example, column 7, lines 22-26.

Similarly, Smith '956 does not teach a functionalized polymer that is bindable to a non-metallic solute or suite of solutes, but instead teaches water-soluble polymers that bind to metal ions. See, for example, column 7, line 65, to column 8, line 9, of the reference.

Finally, Smith '478 does not teach a functionalized polymer that is bindable to a non-metallic solute or suite of solutes. Instead, the reference teaches water-soluble polymers that retain metal ions. See, for example, the Abstract, and Examples 11-24 of the reference, which detail the recovery/retention of a variety of metal by water-soluble polymers. No results describing similar recovery or retention of nonmetallic solutes is reported. While Smith '478 lists arsenic among controlled 'metals' in Table O, nowhere does the reference teach the retention/recovery of this non-metal by a water soluble polymer.

Applicants therefore submit that, because none of the limitations of amended Claims 1, 26, and 36 are taught by Smith '456, Smith '956, and Smith '478, the rejection of these claims and the claims dependent thereon under 35 U.S.C. §102(b) as being anticipated by these three references is successfully overcome.

Rejections under 35 U.S.C. §103

Claims 1-43 have been rejected under 35 U.S.C. §103(a) as being unpatentable over GB 2 360 525 A (referred to hereinafter as "GB-525"). The Examiner states that the instant intended use for binding a solute or suite of solutes dissolved in a solution is an inherent property of prior art polymers, and that it would have been obvious to one skilled in the art to select the suitable amino-functional backbone polymer containing diol functional groups as taught, motivated by the reasonable expectation of success.

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As previously presented, independent Claims 1, 26, and 36 have each been amended to recite the limitation that the functionalized polymer is bindable to a non-metallic solute.

Applicants submit that inherency and obviousness are entirely different questions, and that arguments based on inherency cannot stand where there is no supporting teaching in the prior art; obviousness cannot be predicated on what is unknown. Moreover, in order to establish a *prima facie* case of obviousness, the reference must teach or suggest every element of the claimed invention. Accordingly, Applicants respectfully submit that GB-525 provides no teaching or suggestion that the functionalized polymer is bindable to a non-metallic solute. Because no such teaching is provided by the reference, there would therefore be no reasonable expectation of success to provide motivation for one skilled in the art.

Applicants therefore submit that because GB-525 provides no teaching of a functionalized polymer that is bindable to a non-metallic solute, the rejection of Claims 1, 26, and 36 and the claims dependent thereon under 35 U.S.C. §103(a) as being unpatentable over the reference is successfully overcome.

Claims 3-8, 27-30 and 37 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Smith '456, Smith '478, or Smith '956 as discussed in the rejections under 35 U.S.C. §102 above in view of GB-525.

Claims 3-8, 27-30, and 37 depend from independent Claims 1, 26, and 36, respectively, and therefore include all of the limitations of the base claims by reference. As previously presented, independent Claims 1, 26, and 36 have each been amended to recite the limitation that the functionalized polymer is bindable to a non-metallic solute or suite of non-metallic solutes.

Applicants submit that, in order to establish a *prima facie* case of obviousness, the reference must teach or suggest every element of the claimed invention. As previously presented, GE-525 neither teaches nor suggests a functionalized polymer that is bindable to a non-metallic solute. Similarly, neither Smith '456, Smith '478, nor Smith '956 teach nor suggest this limitation. Instead, these three references each teach water-soluble polymers that either bind to, or retain, metal ions. Applicants submit further that, because Smith '456, Smith '478, and Smith '956 each teach polymers that

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bind only to metals, the references actually teach away from the binding of non-metallic species.

Applicants submit that, because the combination of references cited by the Examiner neither teaches nor suggests all of the limitations of Claims 3-8, 27-30, and 37, the rejection of these claims under 35 U.S.C. §103(a) as being unpatentable over Smith '456, Smith '478, or Smith '956 in view of GB-525 is successfully overcome.

In light of the amendments and remarks presented herein, Applicants submit that the case is in condition for immediate allowance and respectfully requests such action. If, however, any outstanding issues remain unresolved, the Examiner is invited to telephone the Applicants' counsel at the number provided below.

Respectfully submitted,

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